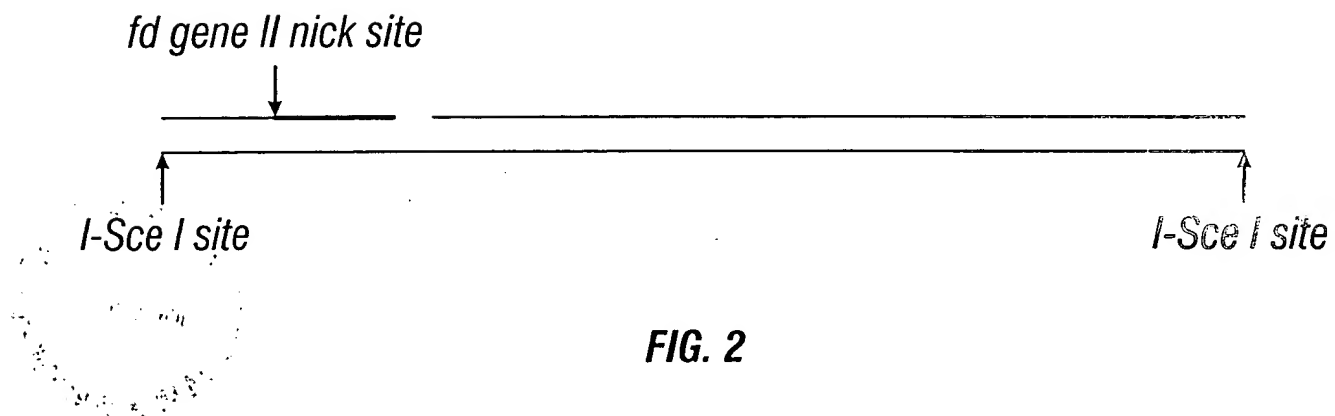


**FIG. 1**



**FIG. 2**

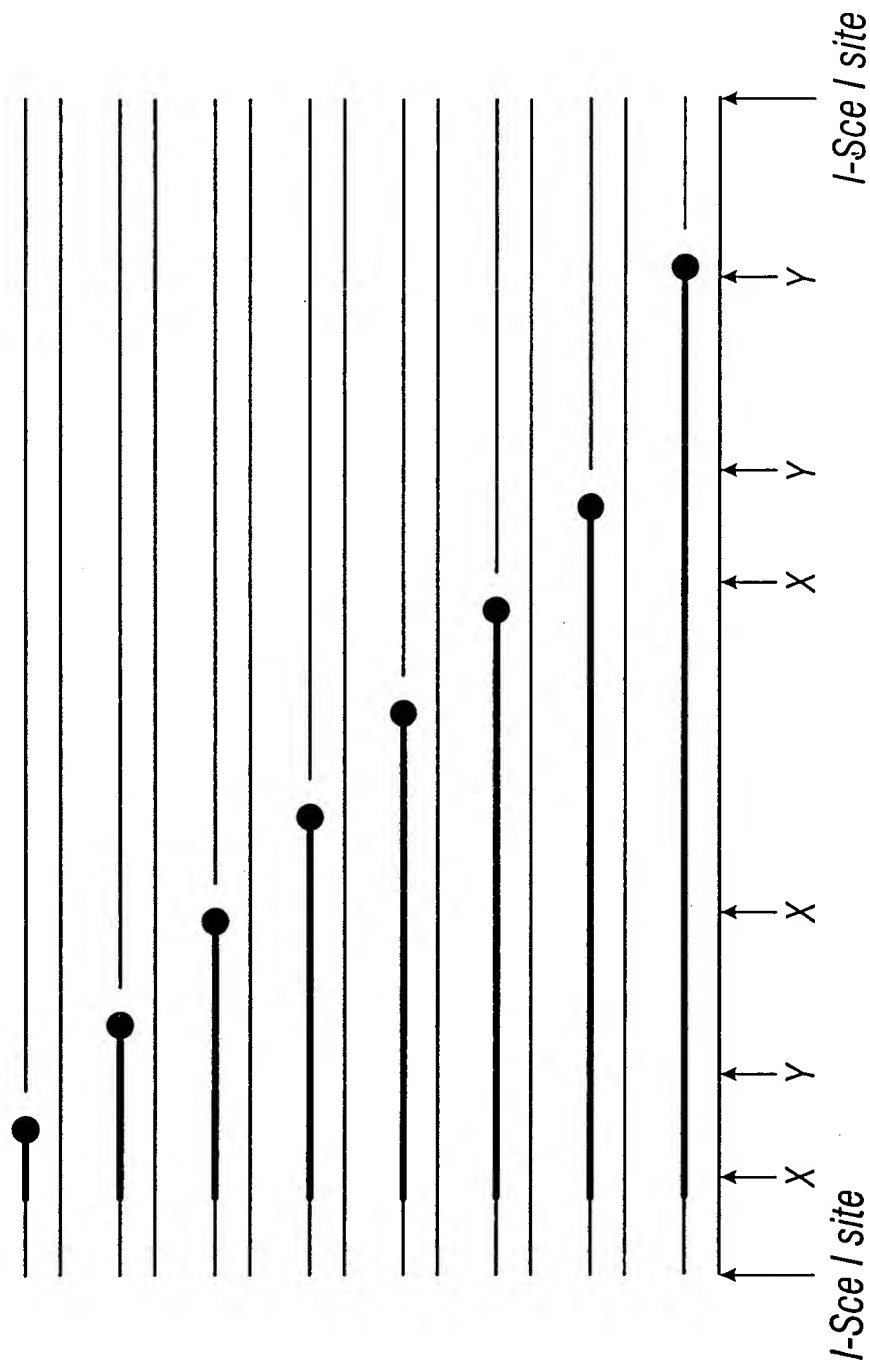
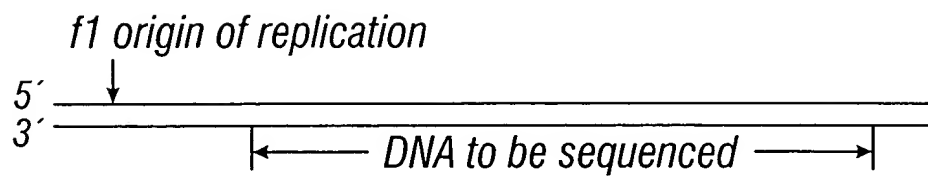


FIG. 3



**FIG. 4A**



**FIG. 4B**



**FIG. 4C**



**FIG. 4D**



**FIG. 4E**

09801346-080601

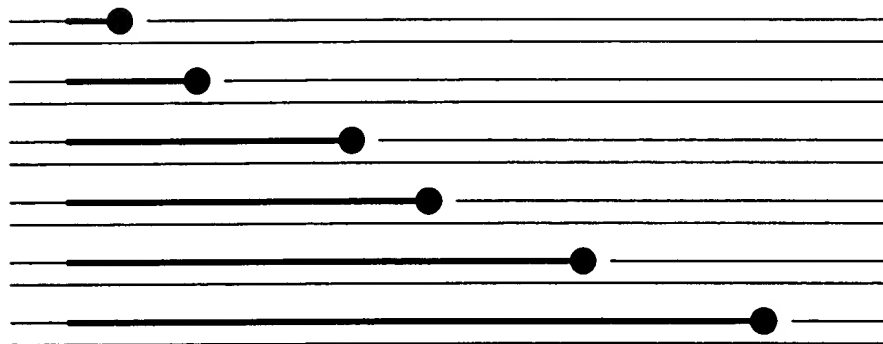


FIG. 4F

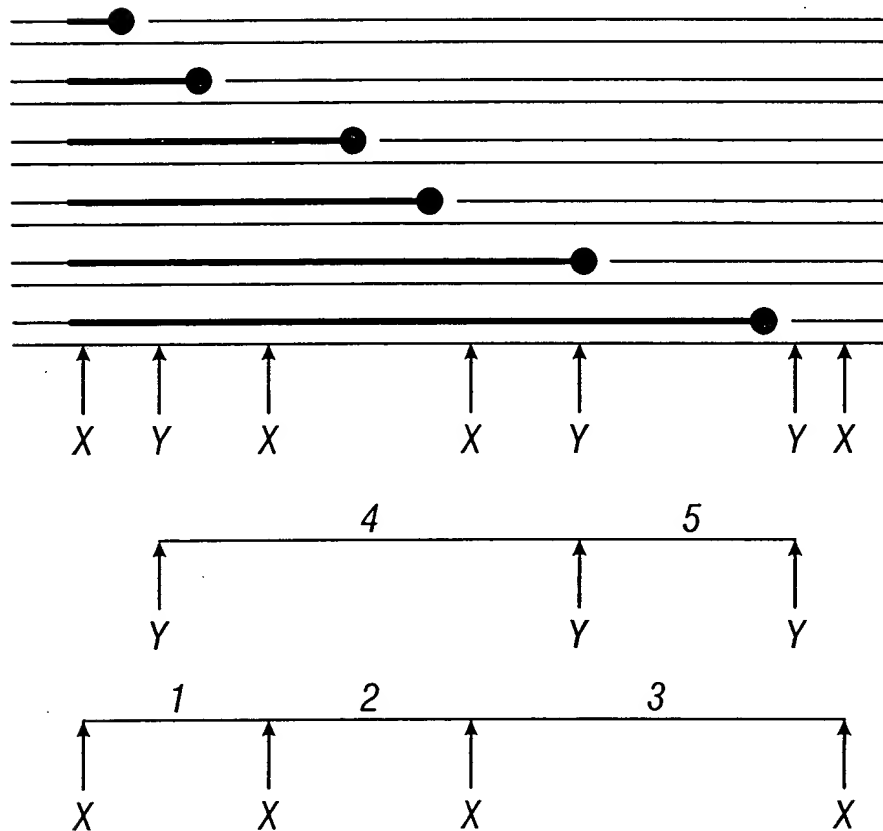
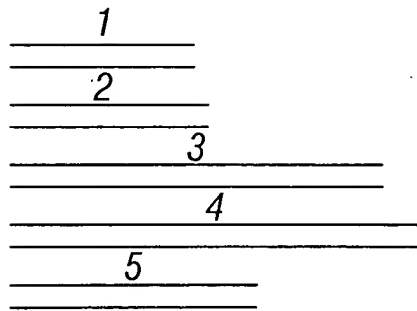
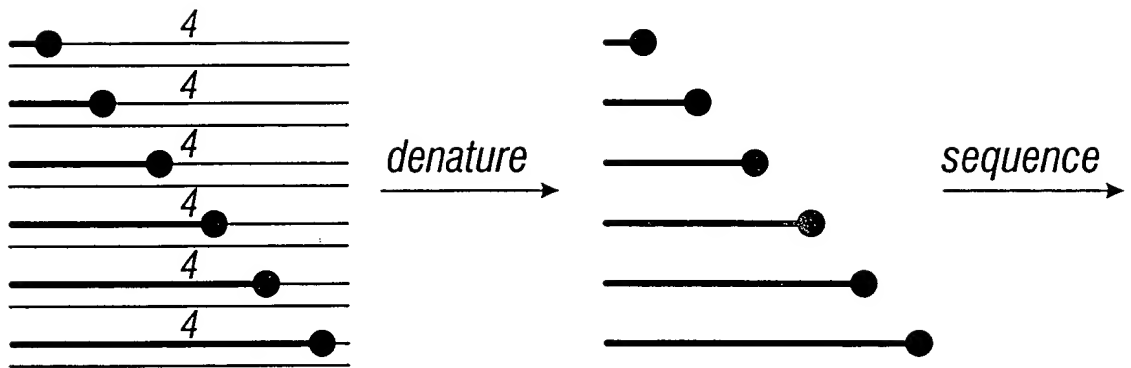


FIG. 4G



**FIG. 4H**



**FIG. 4I**

FIG. 4H

09801345-080601

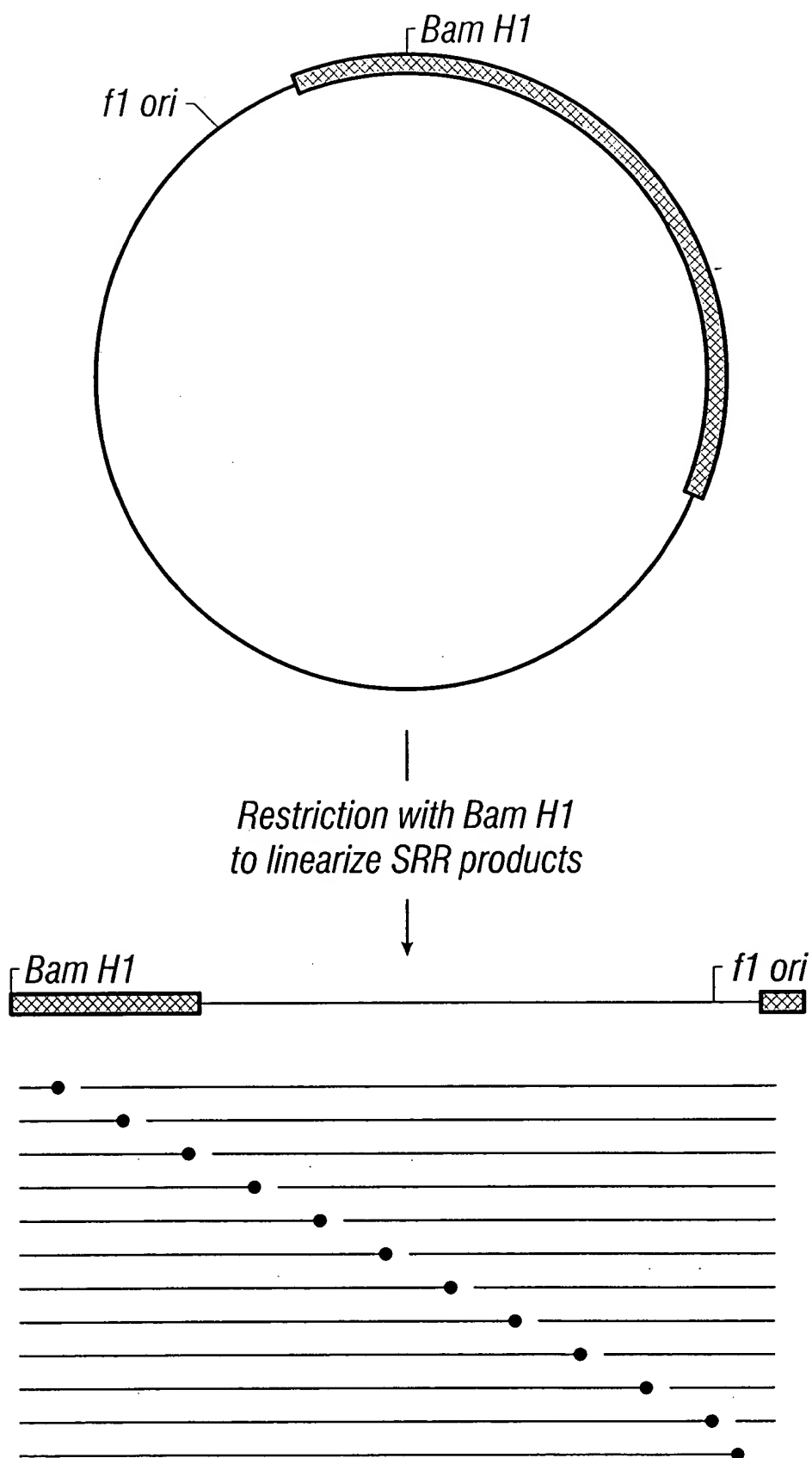
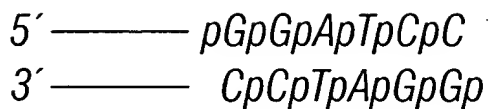
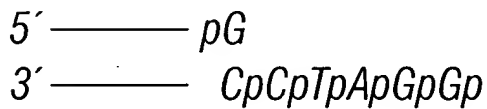


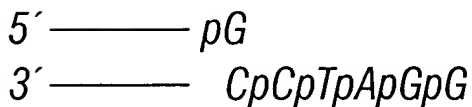
FIG. 5



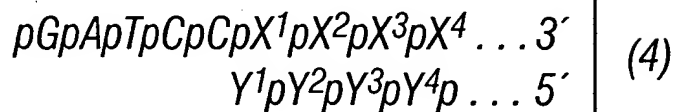
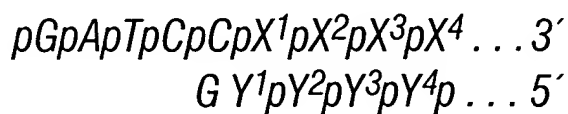
(1)



(2)



(3)

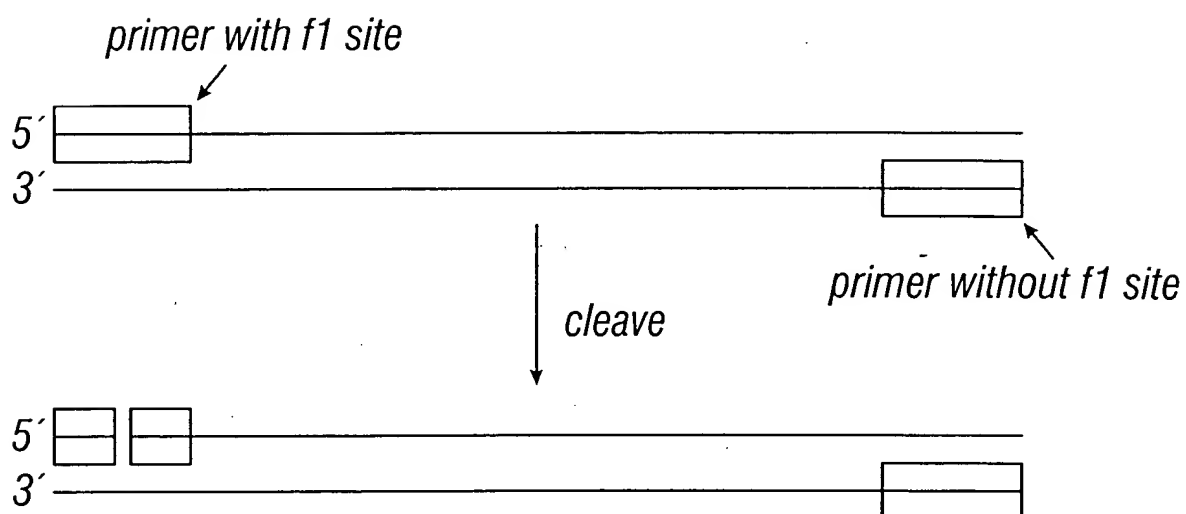


STRAND REPLACEMENT REACTION

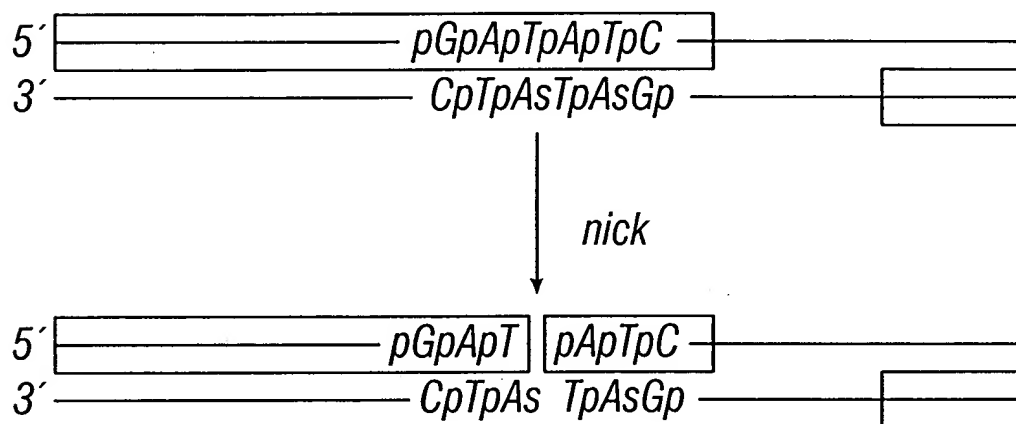
FIG. 6

09301346.00001





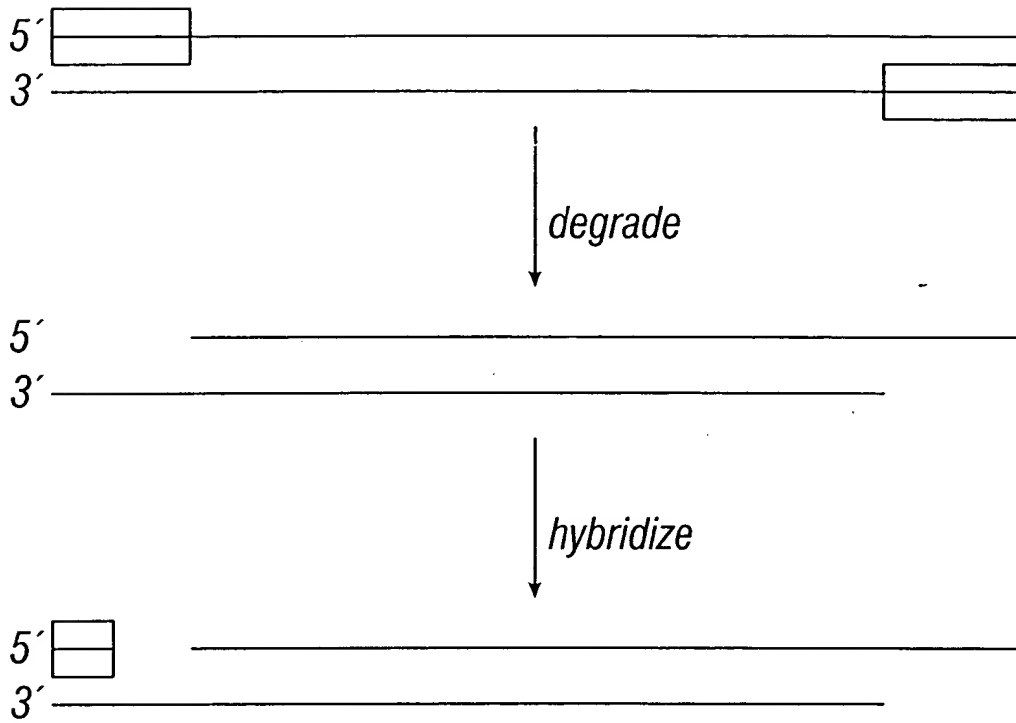
**FIG. 7A**



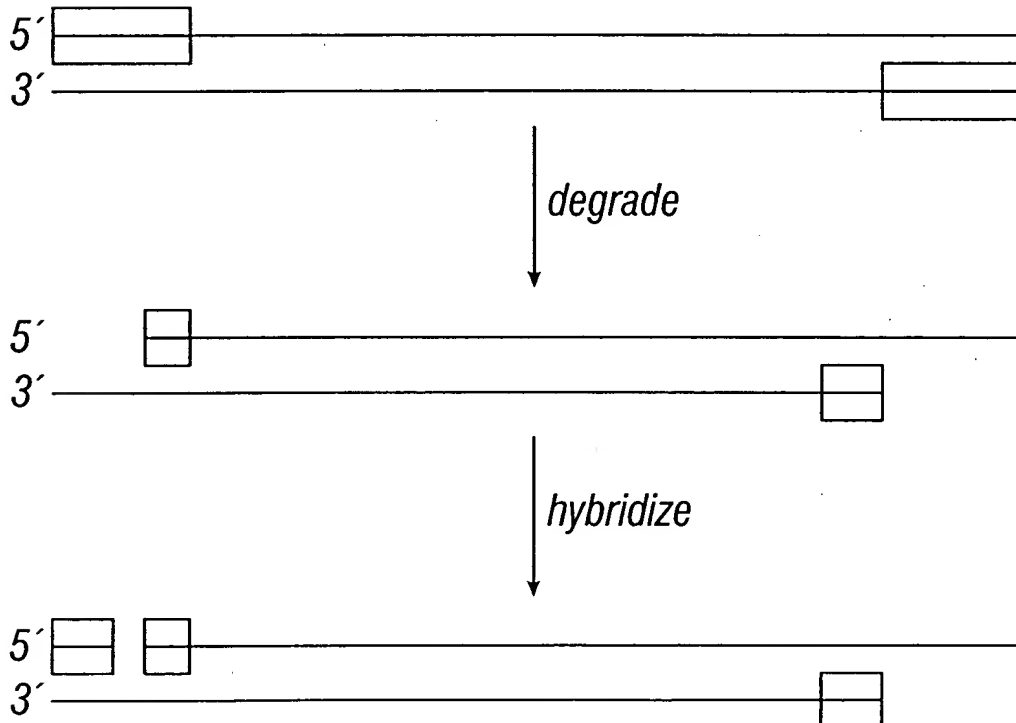
**FIG. 7B**



FOI b7D b7E b7C



**FIG. 7C**



**FIG. 7D**

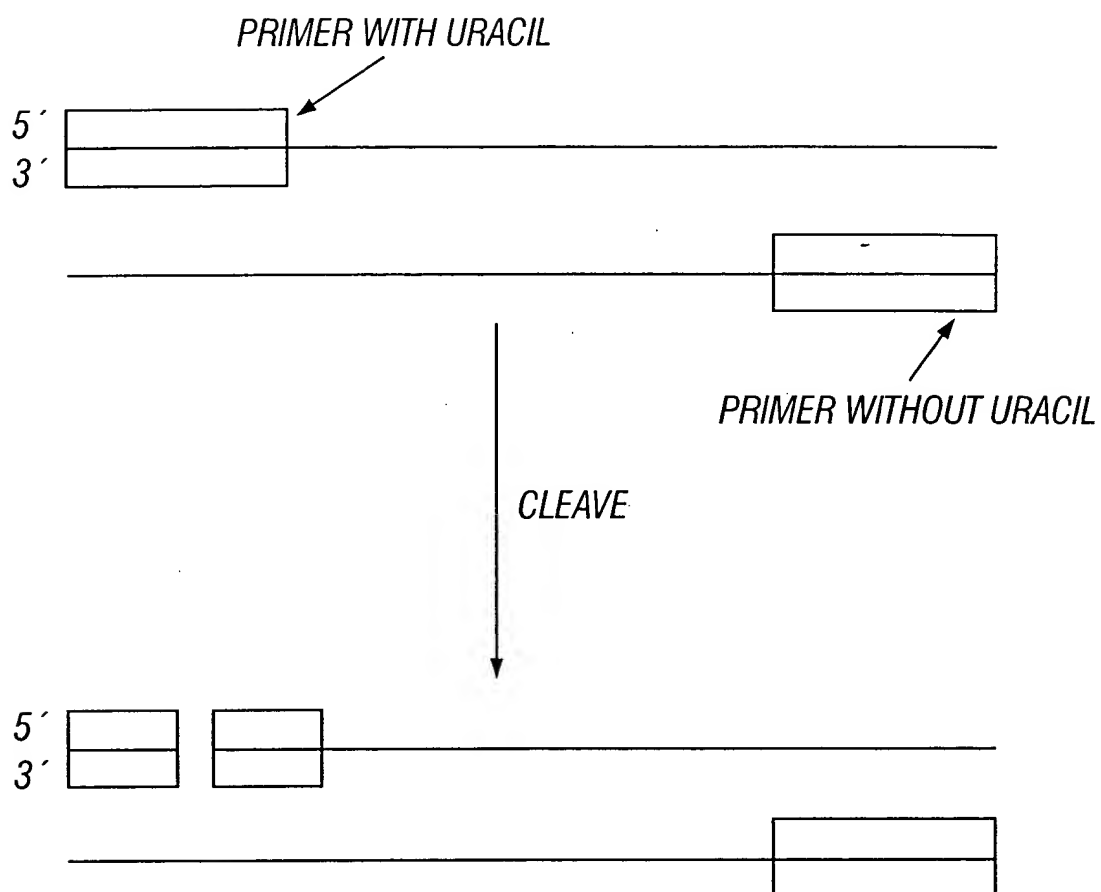
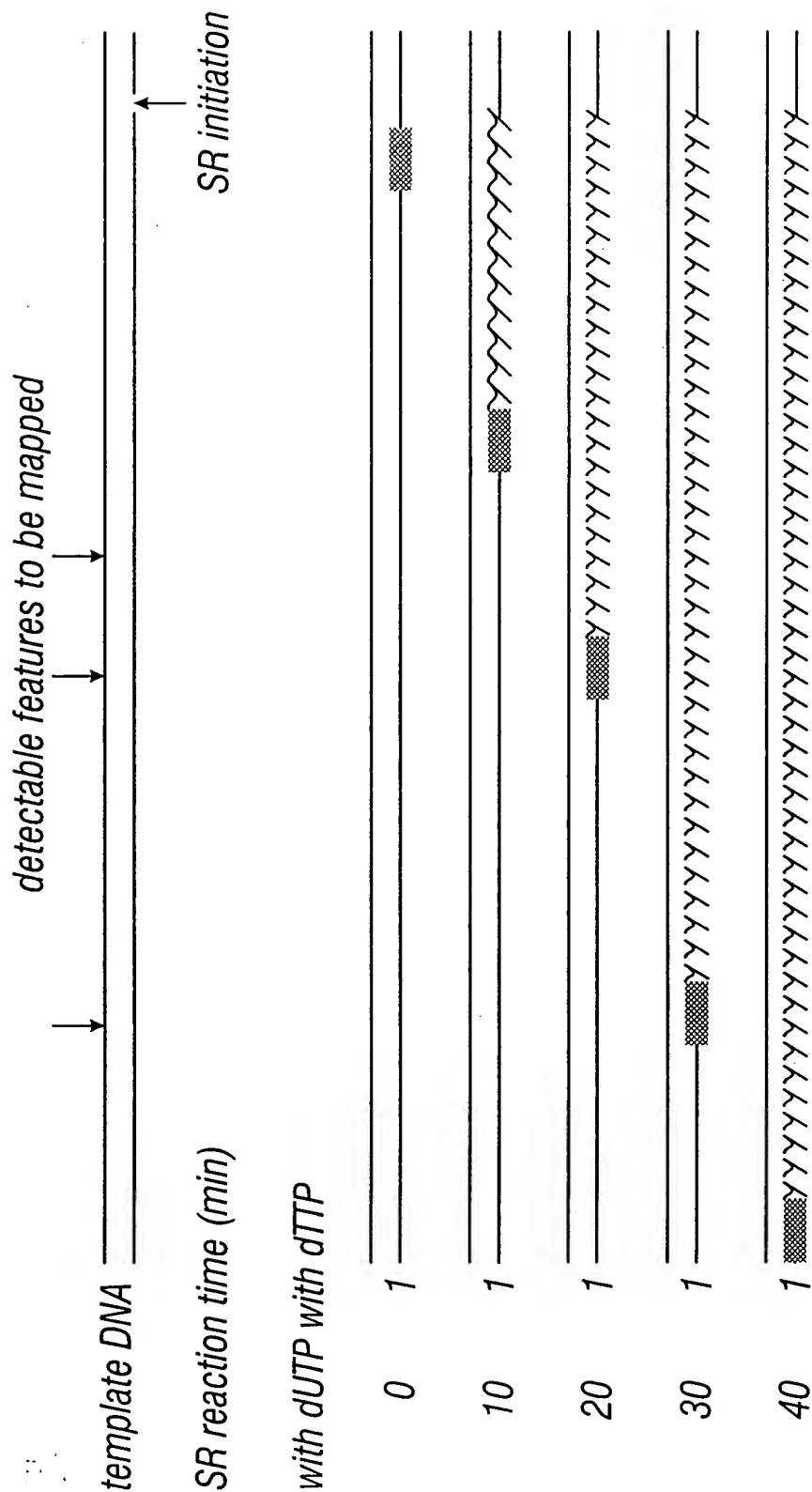


FIG. 7E





 = thymine-containing DNA synthesized by SR  
 = uridine-containing DNA synthesized by SR

FIG. 8

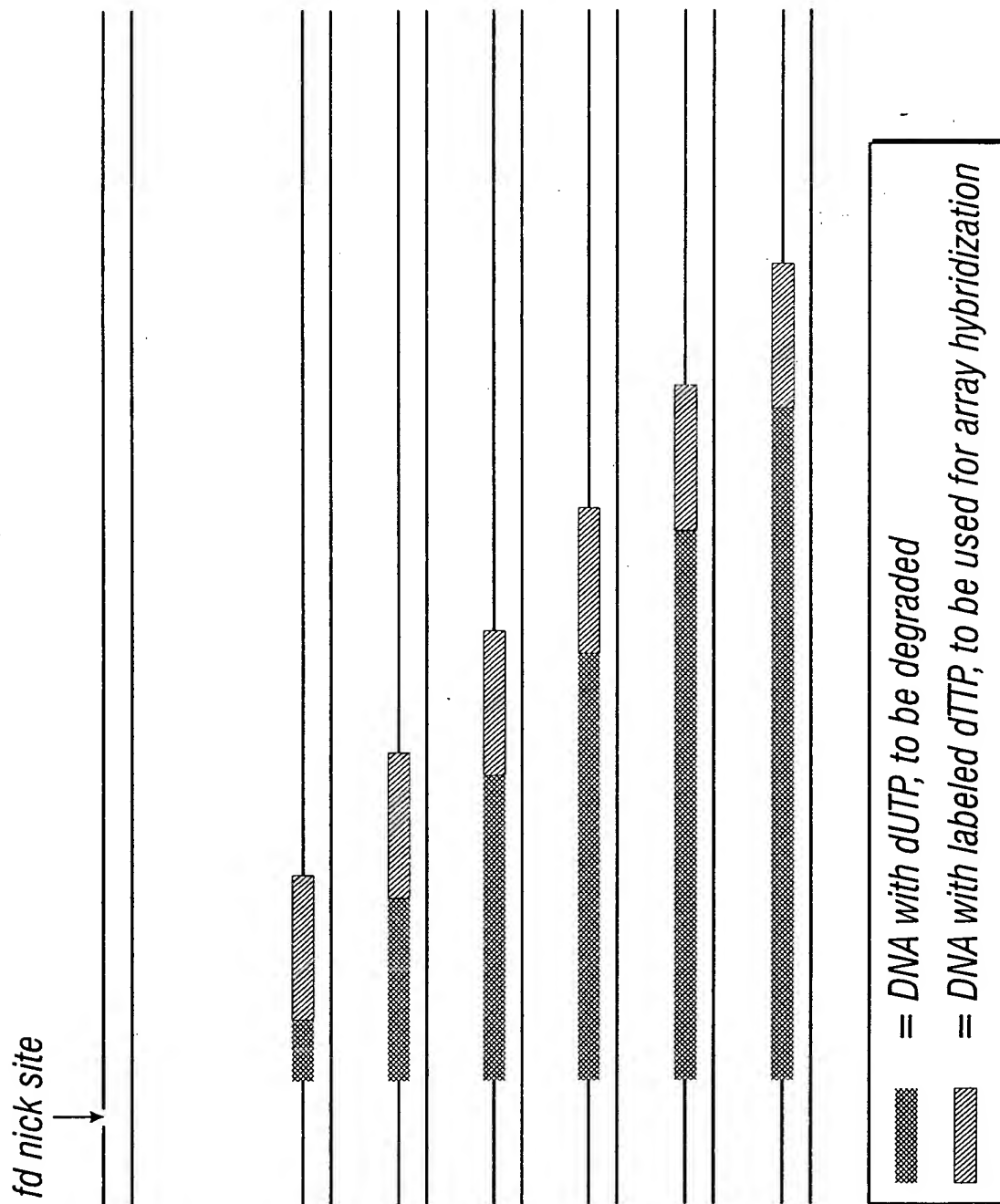


FIG. 9

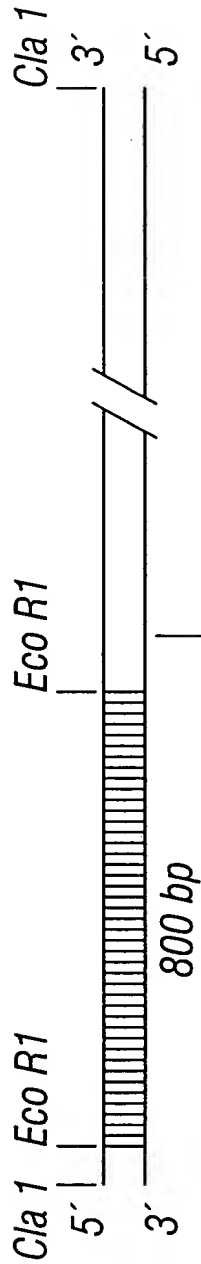


FIG. 10A

Bal 31 nuclease  
T7 gene 6 exonuclease

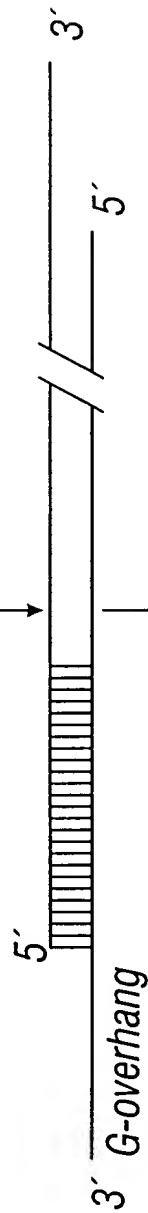


FIG. 10B

Primer  
Hybridization

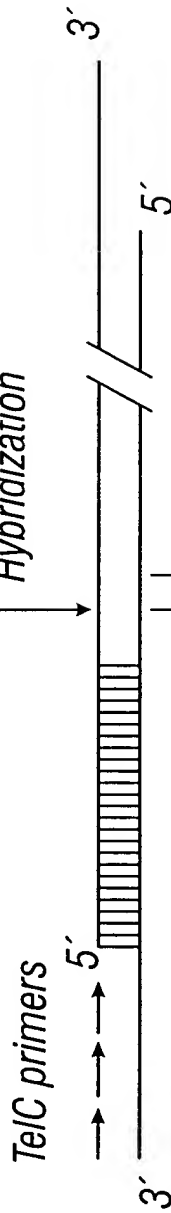


FIG. 10C

Tag DNA Polymerase  
Extension

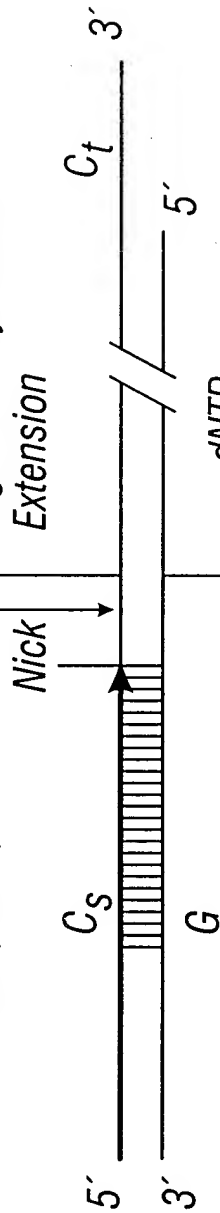


FIG. 10D

Nick

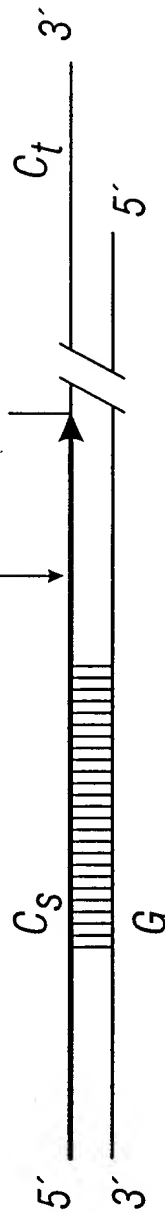


FIG. 10E

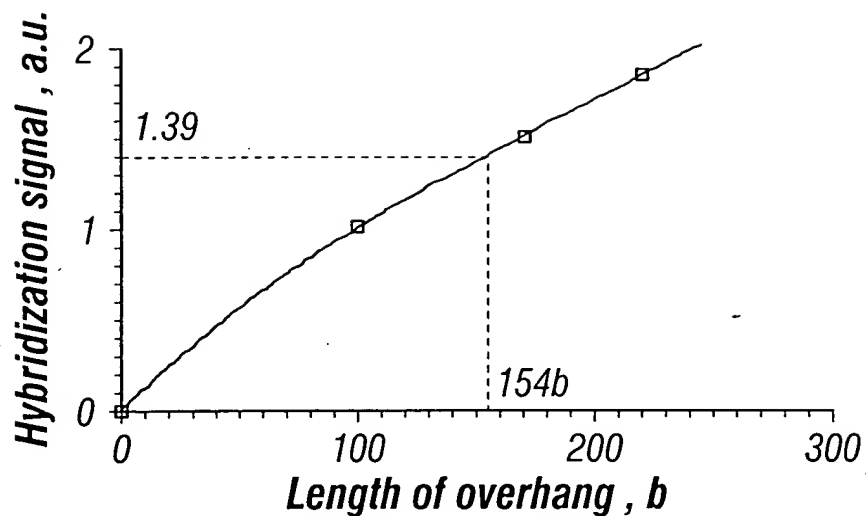
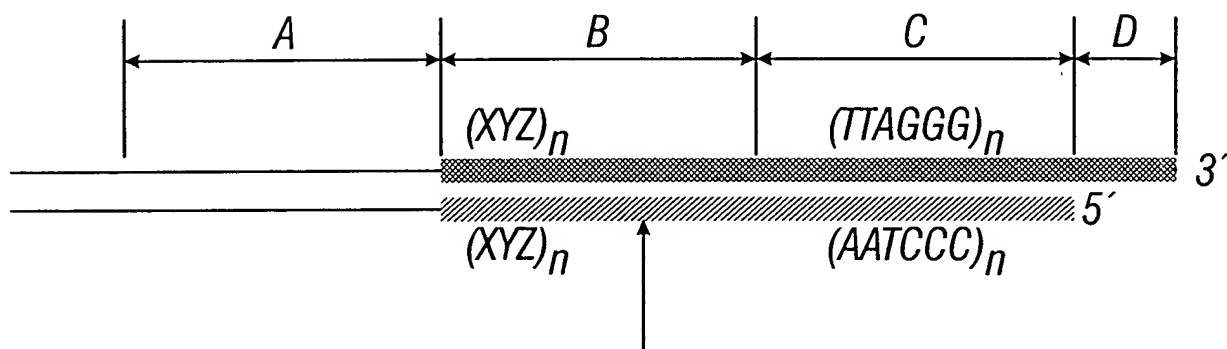


FIG. 11



site of first guanine in the C-rich strand

reaction time (min)

10



20



30



40




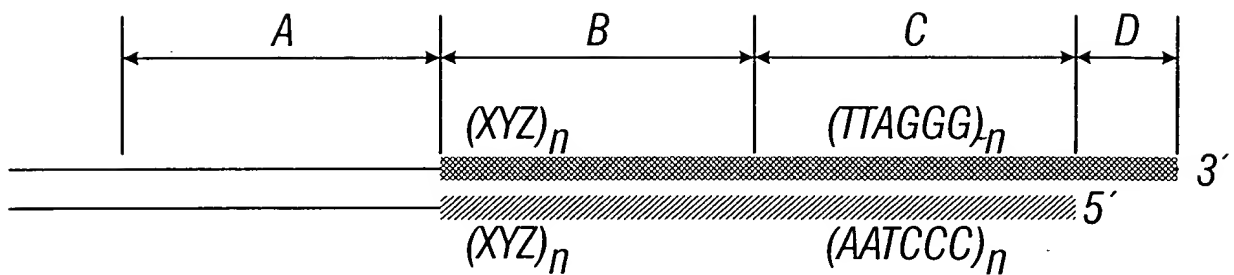
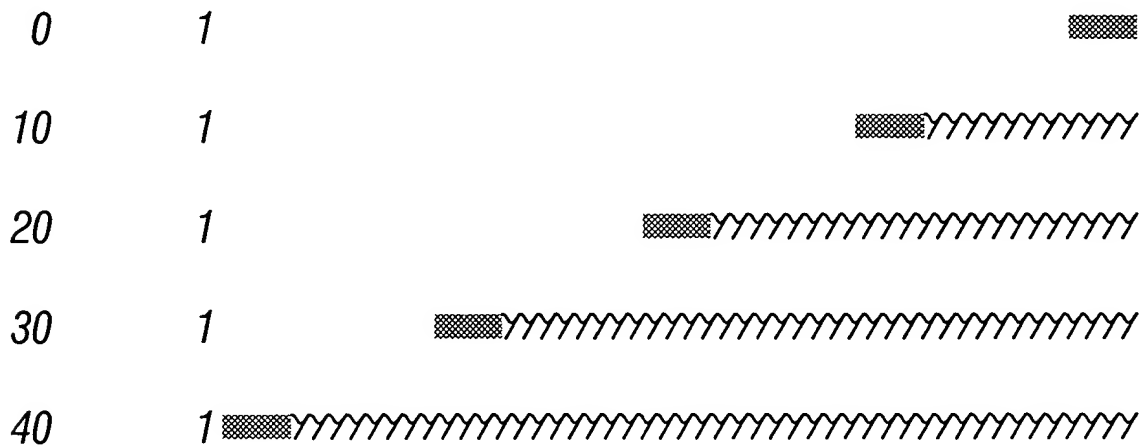
 =DNA synthesized by SR using only dATP, dTTP, and dCTP

FIG. 12



reaction time (min)

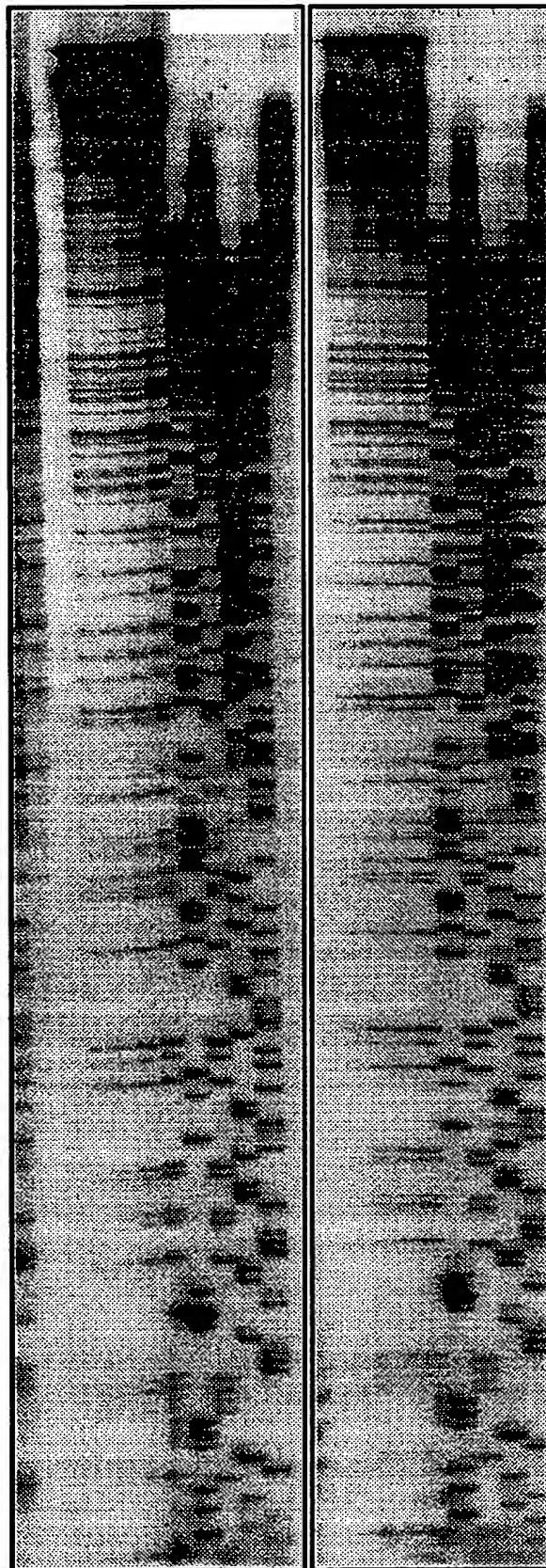
with dUTP with dTTP



= thymidine-containing DNA synthesized by PENT  
 = uridine-containing DNA synthesized by PENT

FIG. 13

<sup>B</sup>  
1 2 3 4 5 6 7 8 9    <sup>A</sup>  
1 2 3 4 5 6 7 8 9



**FIG. 14B**

**FIG. 14A**



5' O-----T-A-C-T-A-T-G-G-T-T-T-A-----3' PCR-AMPLIFIED WITH DETECTION TAG AT 5' END OF  
 3' -----A-T-G-A-T-A-C-C-A-A-A-T-----5' PRIMER X. NUMBERS LABEL THE 12 UNKNOWN BASES.  
 1 2 3 4 5 6 7 8 9 10 11 12  
 PRIMER X UNKNOWN DNA SEQUENCE PRIMER Y  
 RANDOM DEGRADATION (ONLY DAMAGED UPPER STRAND SHOWN)

O-----	A-C-T-A-T-G-G-T-T-T-A-----	O-----	T-A-C-T-A-T- G-T-T-T-A-----
-----	A-T-G-A-T-A-C-C-A-A-A-T-----	-----	A-T-G-A-T-A-C-C-A-A-A-T-----
O-----	T- C-T-A-T-G-G-T-T-T-A-----	O-----	T-A-C-T-A-T-G- T-T-T-A-----
-----	A-T-G-A-T-A-C-C-A-A-A-T-----	-----	A-T-G-A-T-A-C-C-A-A-A-T-----
O-----	T-A- T-A-T-G-G-T-T-T-A-----	O-----	T-A-C-T-A-T-G-G- T-T-A-----
-----	A-T-G-A-T-A-C-C-A-A-A-T-----	-----	A-T-G-A-T-A-C-C-A-A-A-T-----
O-----	T-A-C- A-T-G-G-T-T-T-A-----	O-----	T-A-C-T-A-T-G-G-T- T-A-----
-----	A-T-G-A-T-A-C-C-A-A-A-T-----	-----	A-T-G-A-T-A-C-C-A-A-A-T-----
O-----	T-A-C-T- T-G-G-T-T-T-A-----	O-----	T-A-C-T-A-T-G-G-T-T- A-----
-----	A-T-G-A-T-A-C-C-A-A-A-T-----	-----	A-T-G-A-T-A-C-C-A-A-A-T-----
O-----	T-A-C-T-A- G-G-T-T-T-A-----	O-----	T-A-C-T-A-T-G-G-T-T-T- -----
-----	A-T-G-A-T-A-C-C-A-A-A-T-----	-----	A-T-G-A-T-A-C-C-A-A-A-T-----

15A
15B

FIG. 15

EXPOSE 3'OH AT DAMAGE SITES

O-----	A-C-T-A-T-G-G-T-T-T-A-----	O-----	T-A-C-T-A-T- G-T-T-T-A-----
-----	A-T-G-A-T-A-C-C-A-A-A-T-----	-----	A-T-G-A-T-A-C-C-A-A-A-T-----
O-----	T C-T-A-T-G-G-T-T-T-A-----	O-----	T-A-C-T-A-T-G T-T-T-A-----
-----	A-T-G-A-T-A-C-C-A-A-A-T-----	-----	A-T-G-A-T-A-C-C-A-A-A-T-----
O-----	T-A T-A-T-G-G-T-T-T-A-----	O-----	T-A-C-T-A-T-G-G T-T-A-----
-----	A-T-G-A-T-A-C-C-A-A-A-T-----	-----	A-T-G-A-T-A-C-C-A-A-A-T-----
O-----	T-A-C A-T-G-G-T-T-T-A-----	O-----	T-A-C-T-A-T-G-G-T T-A-----
-----	A-T-G-A-T-A-C-C-A-A-A-T-----	-----	A-T-G-A-T-A-C-C-A-A-A-T-----
O-----	T-A-C-T T-G-G-T-T-T-A-----	O-----	T-A-C-T-A-T-G-G-T-T A-----
-----	A-T-G-A-T-A-C-C-A-A-A-T-----	-----	A-T-G-A-T-A-C-C-A-A-A-T-----
O-----	T-A-C-T-A G-G-T-T-T-A-----	O-----	T-A-C-T-A-T-G-G-T-T-T- -----
-----	A-T-G-A-T-A-C-C-A-A-A-T-----	-----	A-T-G-A-T-A-C-C-A-A-A-T-----

FIG. 15A

INCORPORATE BIOTINYLATED DDTTP AT POSITIONS  
OPPOSITE ADENINE IN TEMPLATE STRAND

O-----T-A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-C-T T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T- -----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----

IMMOBILIZE BIOTINYLATED STRANDS AND REMOVE  
NON-BIOTINYLATED STRANDS

O-----T.	O-----T-A-C-T-A-T-G-G-T.
O-----T-A-C-T.	O-----T-A-C-T-A-T-G-G-T-T.
O-----T-A-C-T-A-T.	O-----T-A-C-T-A-T-G-G-T-T-T.

RELEASE BIOTINYLATED STRANDS, SEPARATE BY  
ELECTROPHORESIS, AND DETECT TAGGED PRIMERS  
(DARK BARS REPRESENT POSITIONS OF THYMINE)

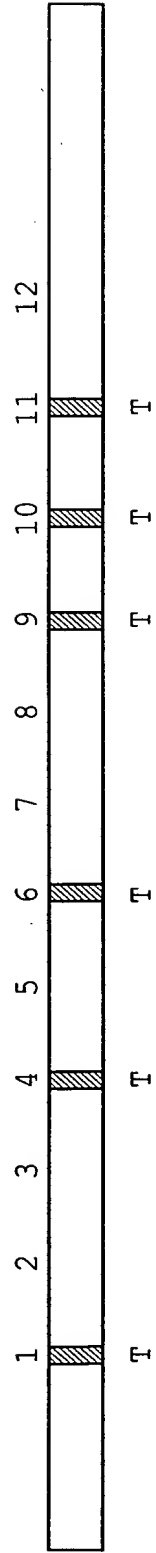


FIG. 15B

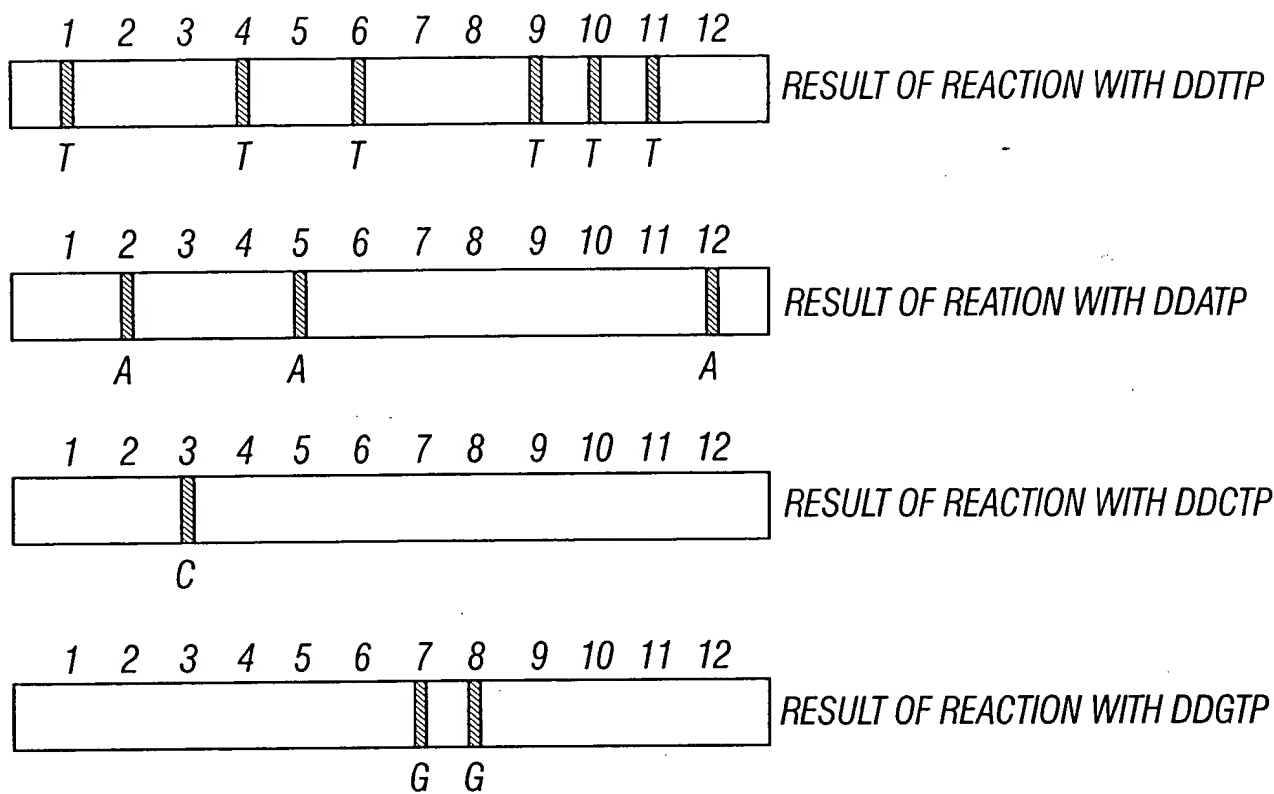


FIG. 16A

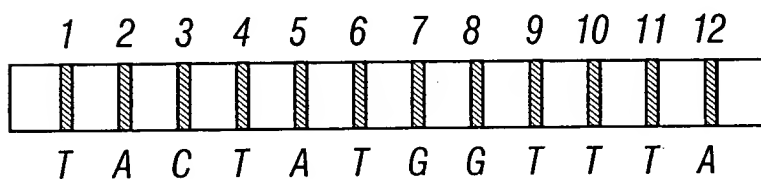


FIG. 16B

5' O-----T-A-C-T-A-T-G-G-T-T-T-A-----3' PCR-AMPLIFIED WITH DETECTION TAG AT 5' END OF  
 3' -----A-T-G-A-T-A-C-C-A-A-A-T-----5' PRIMER X. NUMBERS LABEL THE 12 UNKNOWN BASES.  
 1 2 3 4 5 6 7 8 9 10 11 12  
 PRIMER X UNKNOWN DNA SEQUENCE PRIMER Y

O-----A-C-T-A-T-G-G-T-T-T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T- C-T-A-T-G-G-T-T-T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T-A- T-A-T-G-G-T-T-T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T-A-C- A-T-G-G-T-T-T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T-A-C-T- T-G-G-T-T-T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T-A-C-T-A- G-G-T-T-T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----

O-----T-A-C-T-A-T- G-T-T-T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T-A-C-T-A-T-G- T-T-T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T-A-C-T-A-T-G-G- T-T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T-A-C-T-A-T-G-G-T- T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T-A-C-T-A-T-G-G-T-T- A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T-A-C-T-A-T-G-G-T-T-T-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----

EXPOSE 3'OH AT DAMAGE SITES

O-----A-C-T-A-T-G-G-T-T-T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T C-T-A-T-G-G-T-T-T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T-A T-A-T-G-G-T-T-T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T-A-C A-T-G-G-T-T-T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T-A-C-T T-G-G-T-T-T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T-A-C-T-A G-G-T-T-T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----

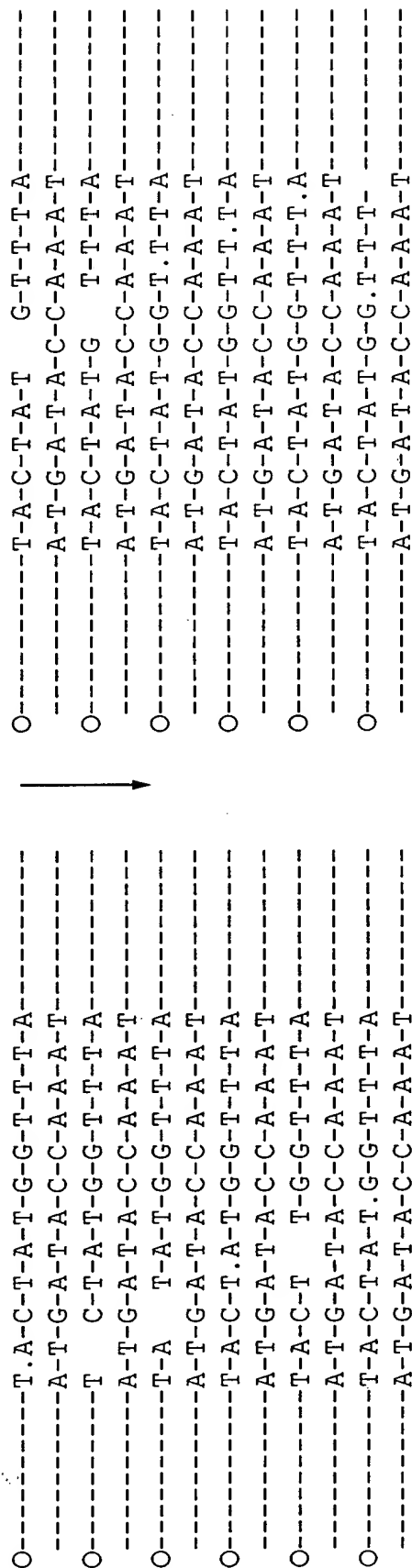
O-----T-A-C-T-A-T- G-T-T-T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T-A-C-T-A-T-G T-T-T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T-A-C-T-A-T-G-G T-T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T-A-C-T-A-T-G-G-T T-A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T-A-C-T-A-T-G-G-T-T A-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----  
 O-----T-A-C-T-A-T-G-G-T-T-T-----  
 -----A-T-G-A-T-A-C-C-A-A-A-T-----

17A
17B

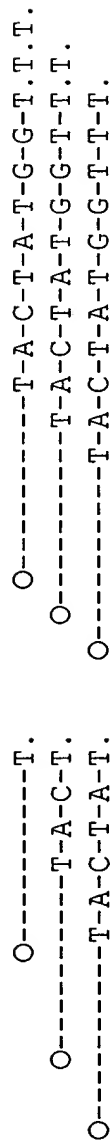
FIG. 17A

FIG. 17

incorporate biotinylated ddTTP at positions opposite adenine in template strand



immobilize biotinylated strands and remove non-biotinylated strands



release biotinylated strands, separate by electrophoresis, and detect tagged primers (dark bars represent positions of terminal thymine)

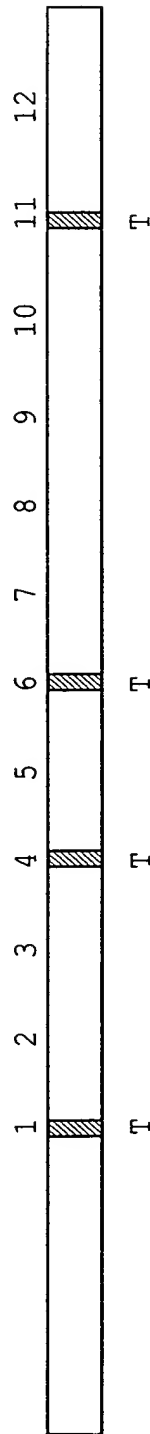


FIG. 17B

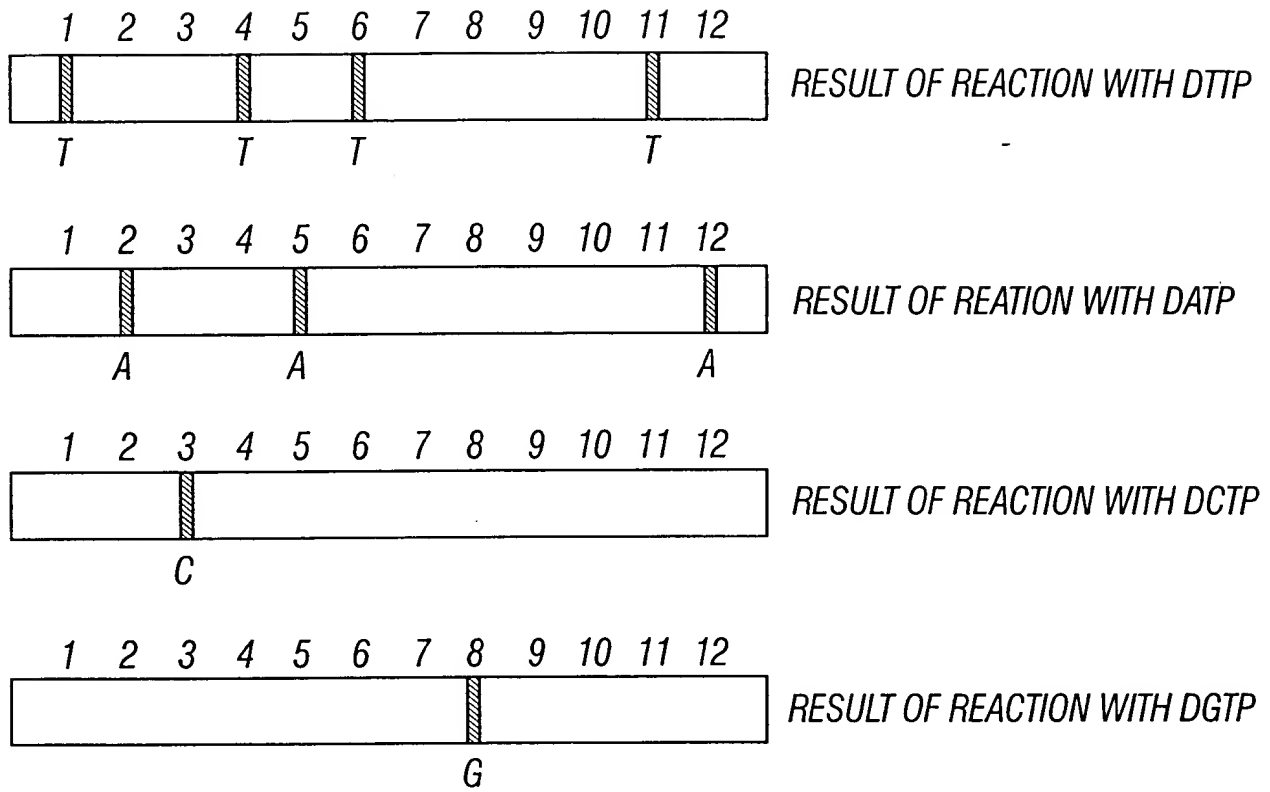


FIG. 18A

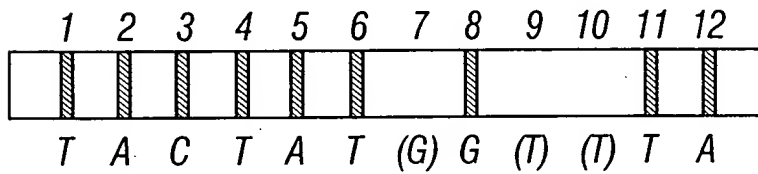


FIG. 18B

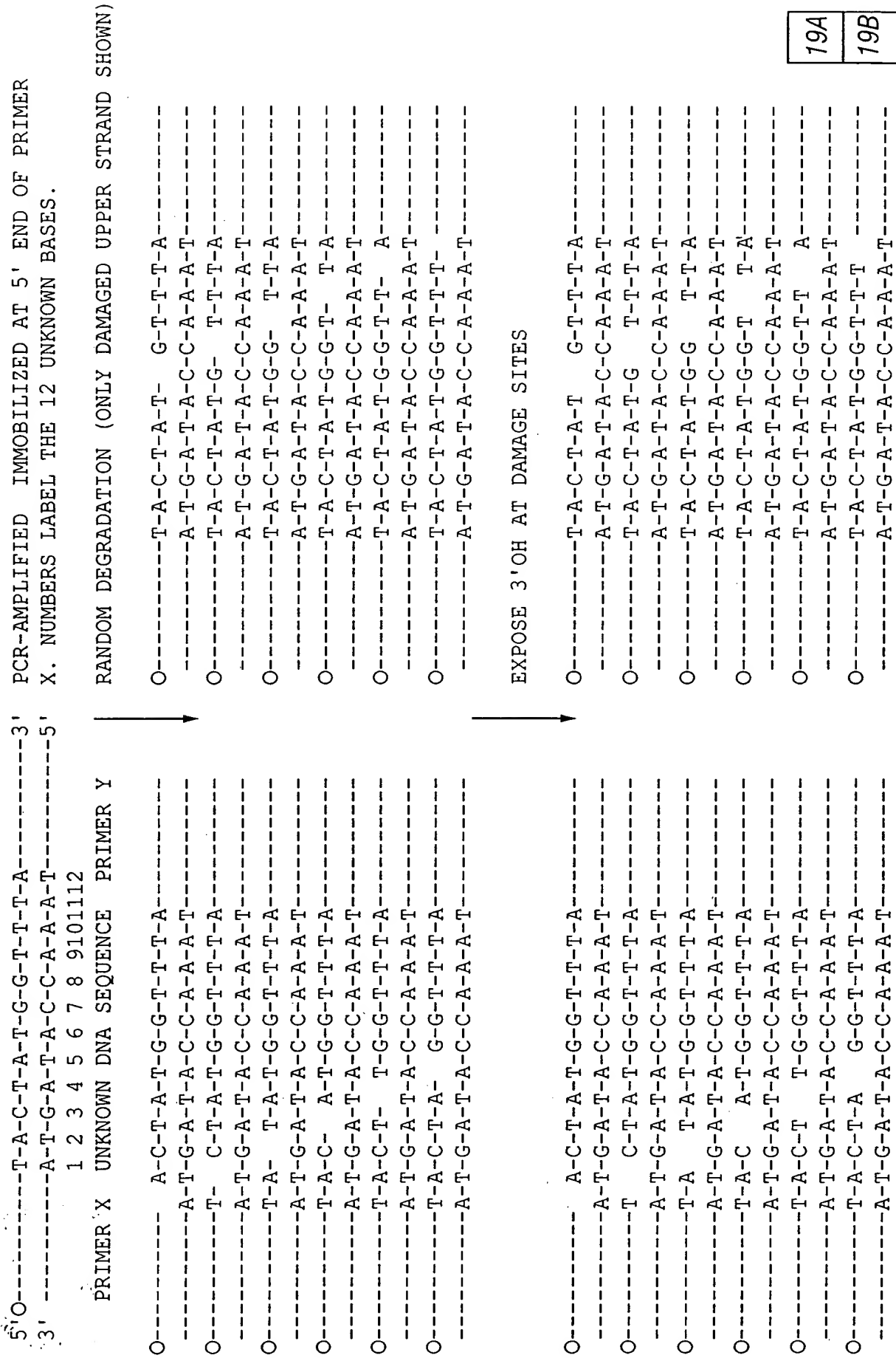


FIG. 19A

FIG. 19

INCORPORATE TAGGED DDTTP AT POSITIONS  
OPPOSITE ADENINE IN TEMPLATE STRAND

O-----T-A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T	G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G	T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T-A-----	-----T-A-C-T-A-T-G-G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T.A-----	-----T-A-C-T-A-T-G-G-T-T-T.A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T-T-----	-----T-A-C-T-A-T-G-G-T-T-T-T-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----

DENATURE AND WASH TO REMOVE ALL STRANDS THAT ARE  
NOT TAGGED AT 5' END

O-----T.	O-----T-A-C-T-A-T
O-----T	O-----T-A-C-T-A-T-G
O-----T-A	O-----T-A-C-T-A-T-G-G-T.
O-----T-A-C-T.	O-----T-A-C-T-A-T-G-G-T-T.
O-----T-A-C-T	O-----T-A-C-T-A-T-G-G-T-T-T.
O-----T-A-C-T-A-T.	O-----T-A-C-T-A-T-G-G-T-T-T-T-

MOBILIZE STRANDS, SEPARATE BY  
ELECTROPHORESIS, AND DETECT TAGGED' BASES  
(DARK BARS REPRESENT POSITIONS OF THYMINE)

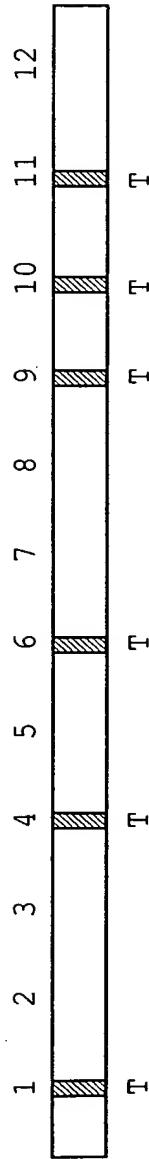


FIG. 19B



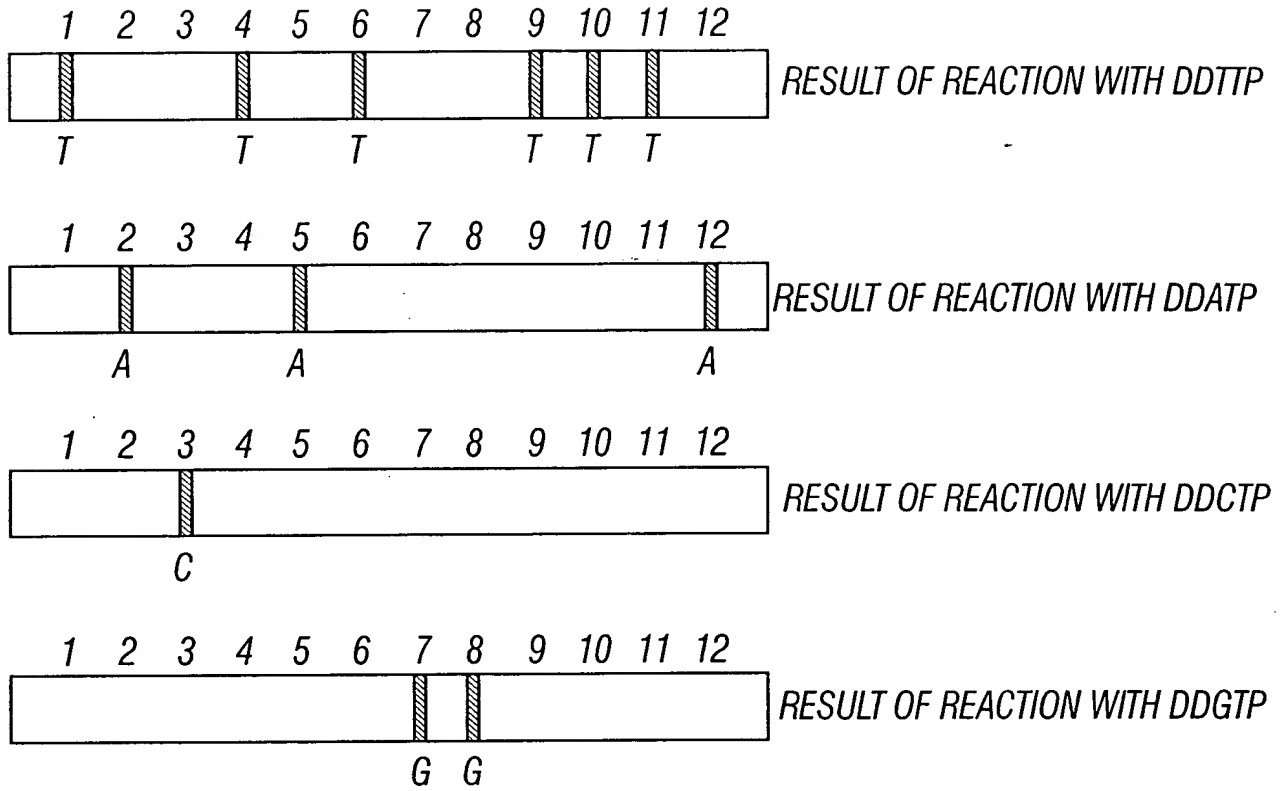


FIG. 20A

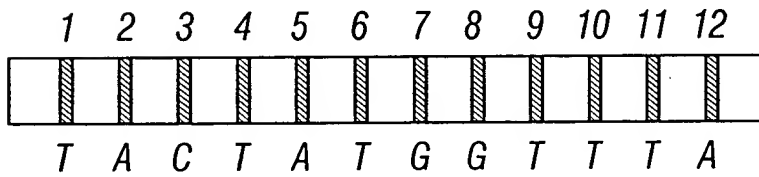


FIG. 20B

PCR amplify, immobilize, and expose OH  
at random sites as in Fig. 5.

O-----A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-----G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-----C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-----T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-----T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-----T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-C-----A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-----T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-C-T-----T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-----A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-C-T-A-----G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----

Block ends opposite T, G' & C with ddATP, ddGTP, ddCTP  
(shown in bold letters), remove ddNTPs, then add dTTP.

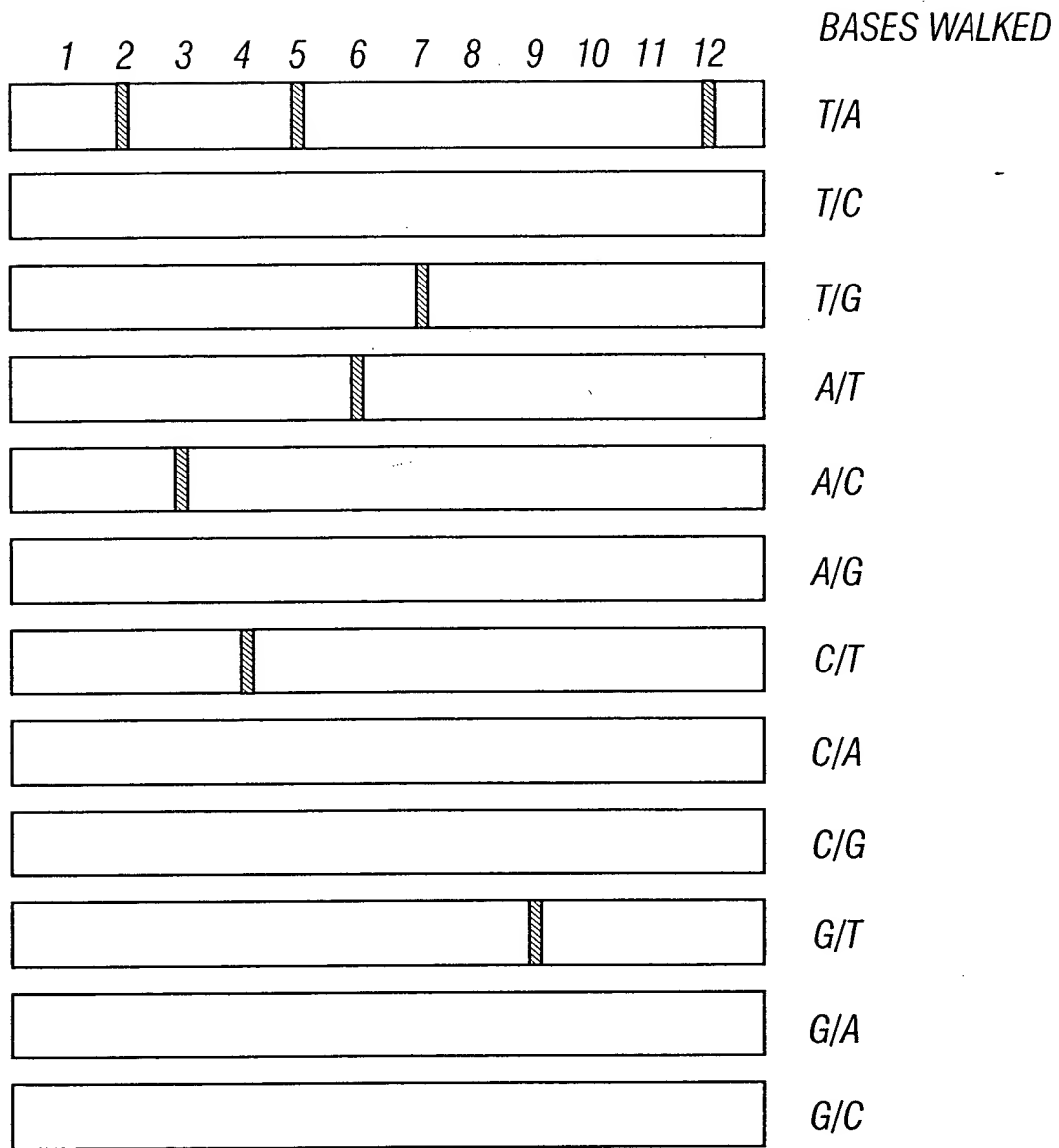
O-----T-A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----

21A
21B

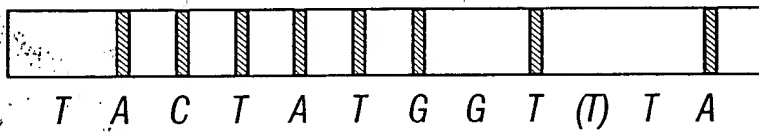
FIG. 21A

FIG. 21





**FIG. 22A**



**FIG. 22B**

PCR amplify, immobilize, and expose 3' OH at random sites as in Fig. 5.

O-----A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T	G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----	
O-----T C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G	T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----	
O-----T-A T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G	T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----	
O-----T-A-C A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T	T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----	
O-----T-A-C-T T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T	A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----	
O-----T-A-C-T-A G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T	-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----	

Block ends opposite T, G & C with ddATP, ddGTP, ddCTP  
(shown in bold letters), remove ddNTPs, then add dTTP.

O-----T-A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----
O-----T-A-C-T-A-T-G-G-T-T-T-A-----	O-----T-A-C-T-A-T-G-G-T-T-T-A-----
-----A-T-G-A-T-A-C-C-A-A-A-T-----	-----A-T-G-A-T-A-C-C-A-A-A-T-----

23A
23B

FIG. 23A

FIG. 23

Block ends opposite A, G & C with ddTTP, ddGTP, ddCTP  
(shown in bold), remove ddNTPs, then add dATP.

O-----T-A-C-T-A-T-G-G-T-T-T-A-----  
-----A-T-G-A-T-A-C-C-A-A-A-T-----  
O-----T-A-C-T-A-T-G-G-T-T-T-A-----  
-----A-T-G-A-T-A-C-C-A-A-A-T-----  
O-----T-A-C-T-A-T-G-G-T-T-T-A-----  
-----A-T-G-A-T-A-C-C-A-A-A-T-----  
O-----T-A-C-T-A-T-G-G-T-T-T-A-----  
-----A-T-G-A-T-A-C-C-A-A-A-T-----  
O-----T-A-C-T-A-T-G-G-T-T-T-A-----  
-----A-T-G-A-T-A-C-C-A-A-A-T-----  
O-----T-A-C-T-A-T-G-G-T-T-T-A-----  
-----A-T-G-A-T-A-C-C-A-A-A-T-----  
O-----T-A-C-T-A-T-G-G-T-T-T-A-----  
-----A-T-G-A-T-A-C-C-A-A-A-T-----  
O-----T-A-C-T-A-T-G-G-T-T-T-A-----  
-----A-T-G-A-T-A-C-C-A-A-A-T-----

Block ends opposite A, G & C with ddTTP, ddGTP, ddCTP  
Block ends opposite T, G & C with ddATP, ddGTP, ddCTP  
(shown in bold), remove ddNTPs, then add tagged ddTTP.

O-----T-A-C-T-A-T-G-G-T-T-T-A-----  
-----A-T-G-A-T-A-C-C-A-A-A-T-----  
O-----T-A-C-T-A-T-G-G-T-T-T-A-----  
-----A-T-G-A-T-A-C-C-A-A-A-T-----  
O-----T-A-C-T-A-T-G-G-T-T-T-A-----  
-----A-T-G-A-T-A-C-C-A-A-A-T-----  
O-----T-A-C-T-A-T-G-G-T-T-T-A-----  
-----A-T-G-A-T-A-C-C-A-A-A-T-----  
O-----T-A-C-T-A-T-G-G-T-T-T-A-----  
-----A-T-G-A-T-A-C-C-A-A-A-T-----  
O-----T-A-C-T-A-T-G-G-T-T-T-A-----  
-----A-T-G-A-T-A-C-C-A-A-A-T-----  
O-----T-A-C-T-A-T-G-G-T-T-T-A-----  
-----A-T-G-A-T-A-C-C-A-A-A-T-----  
O-----T-A-C-T-A-T-G-G-T-T-T-A-----  
-----A-T-G-A-T-A-C-C-A-A-A-T-----

Remove all non-immobilized DNA, then release, size-separate, and detect strands with tagged terminal T.

1 2 3 4 5 6 7 8 9 10 11 12



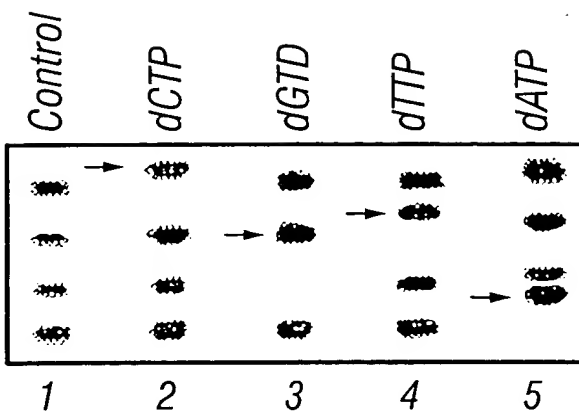


FIG. 24

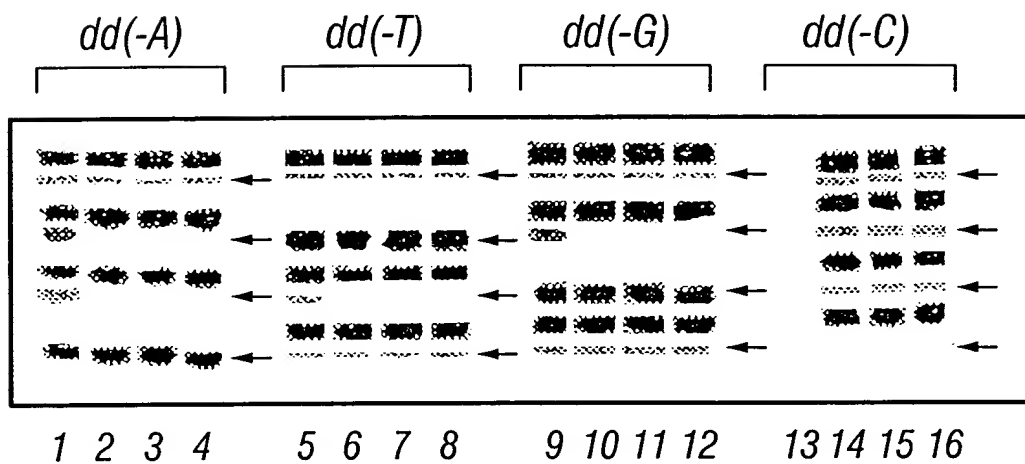


FIG. 25

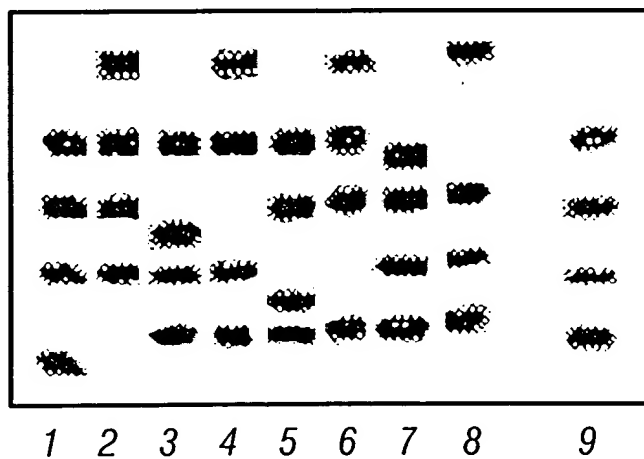


FIG. 26

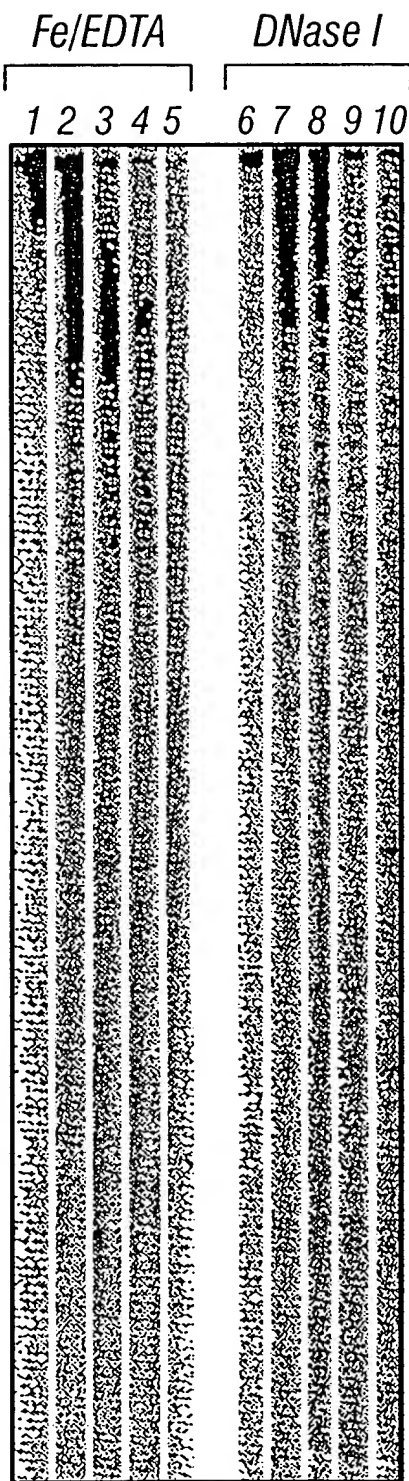
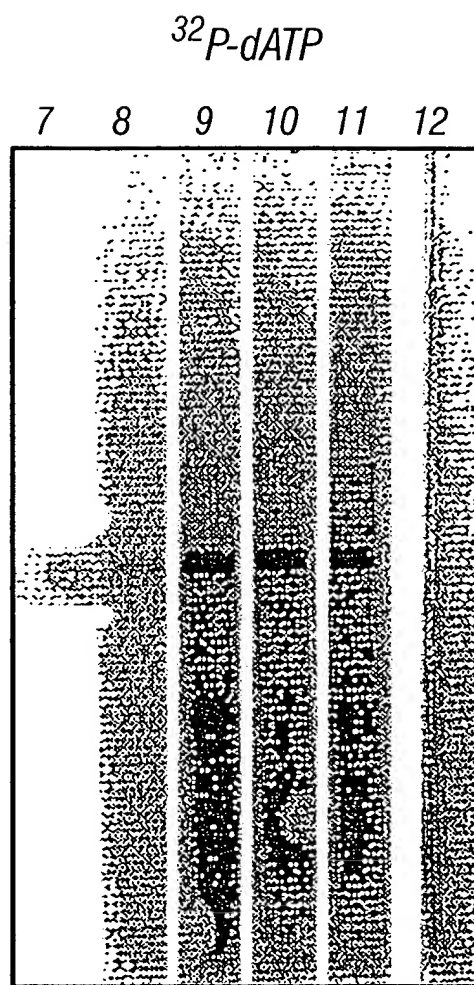


FIG. 27





**FIG. 28A**



**FIG. 28B**

09801345.080601

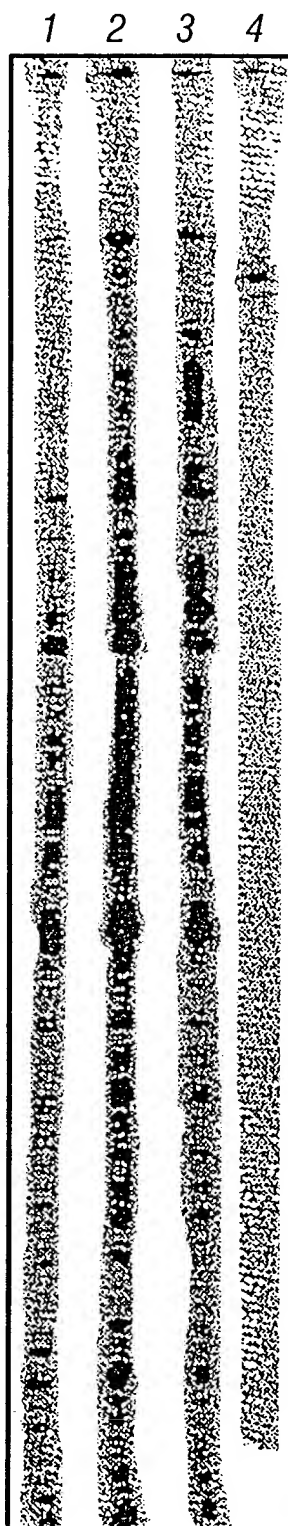


FIG. 29

[illegible]

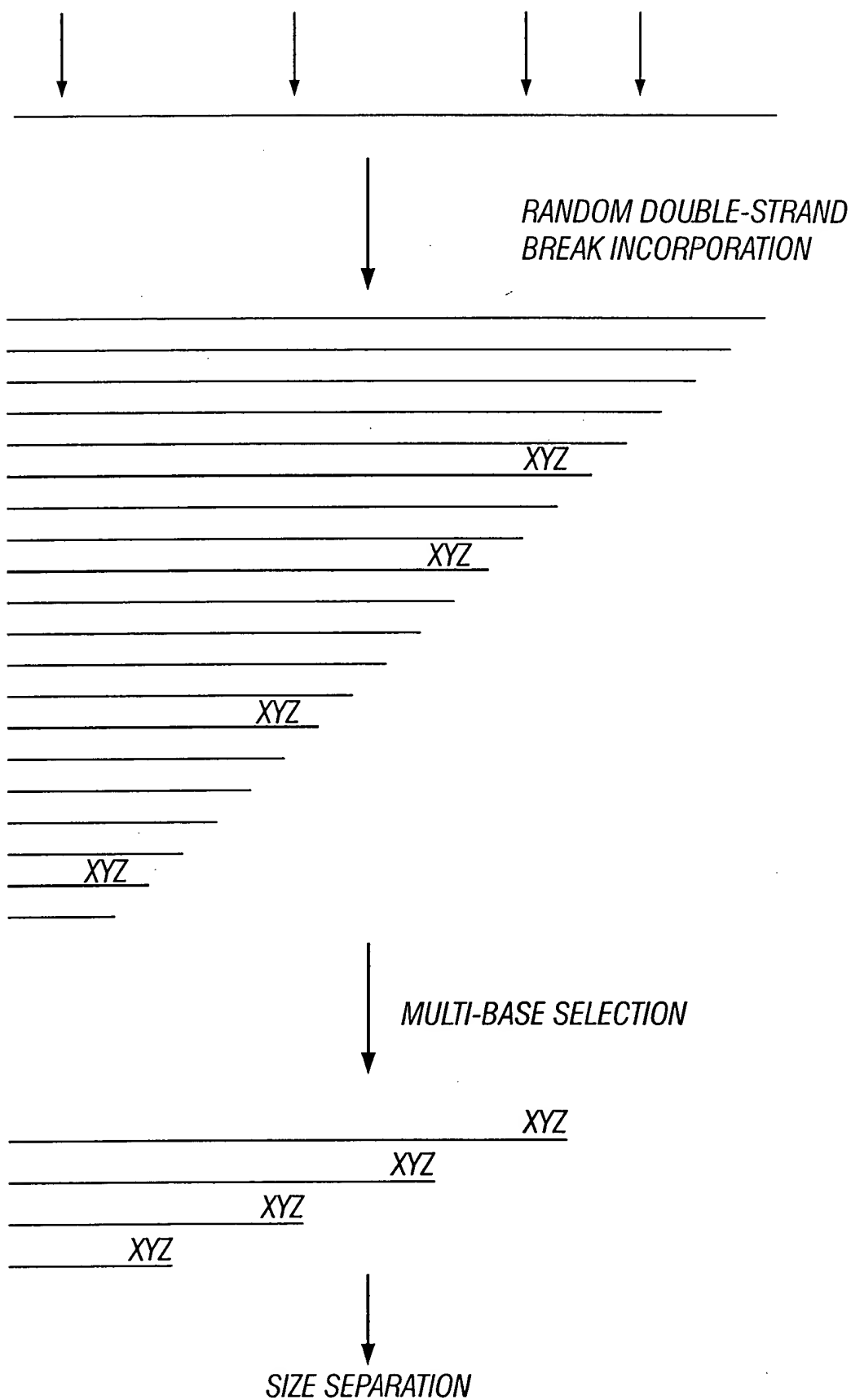
● - 5' -PHOSPHATE  
■ - 3' DIDEOXYNUCLEOTIDE OR NH<sub>3</sub> GROUP

**FIG. 30A**

5' _____	X	3' OH 4 C-X OLIGOS
5' _____	X	3' OH 16 C-XY OLIGOS
5' _____	XYZ	3' OH 64 C-XYZ OLIGOS

*X, Y AND Z ARE A, T, G OR C*

**FIG. 30B**



**FIG. 31**

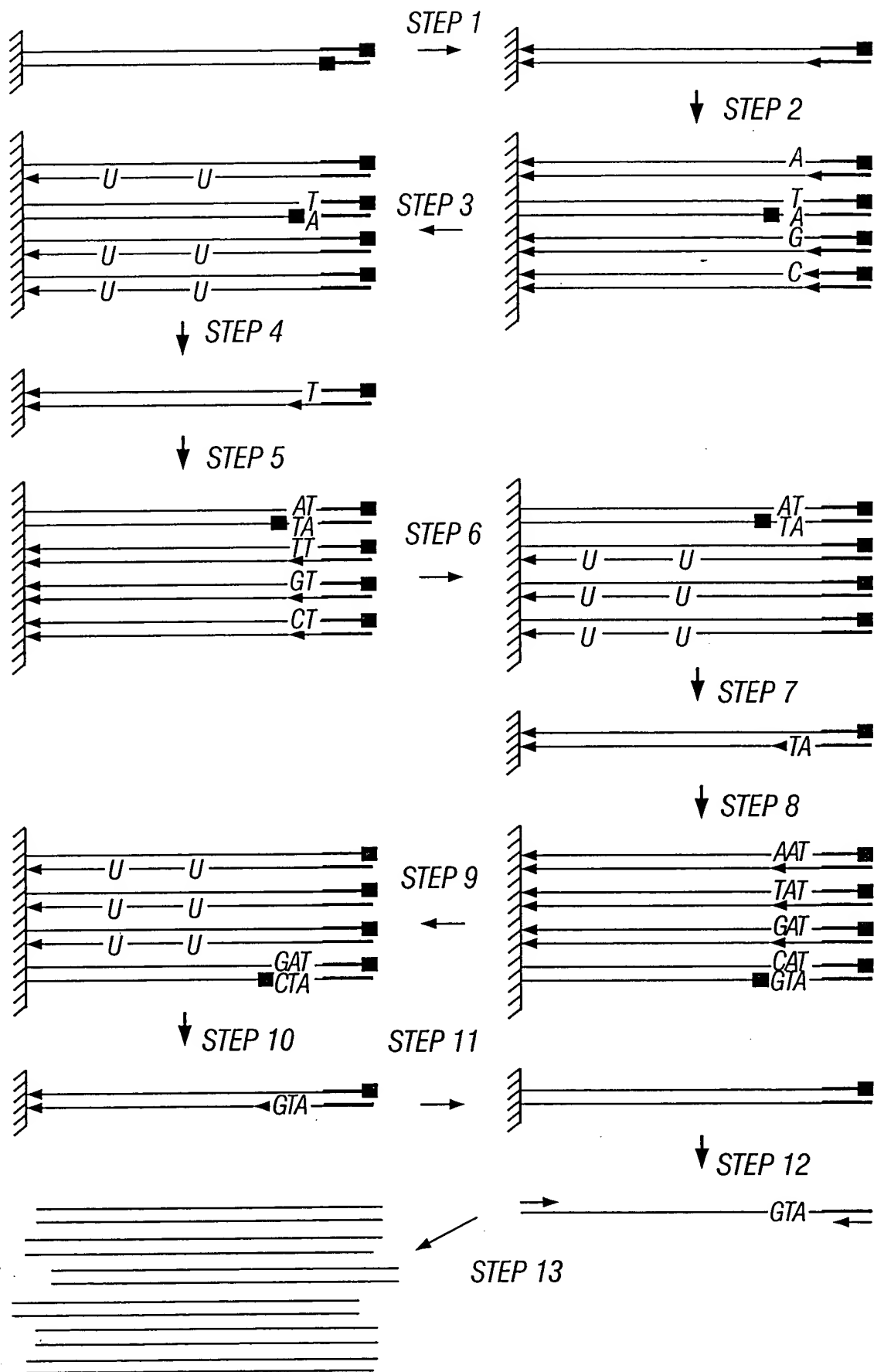


FIG. 32

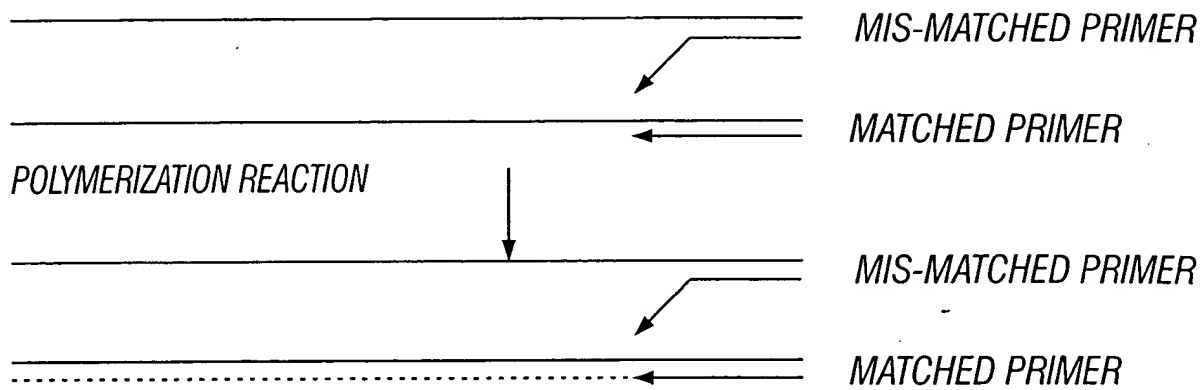


FIG. 33A

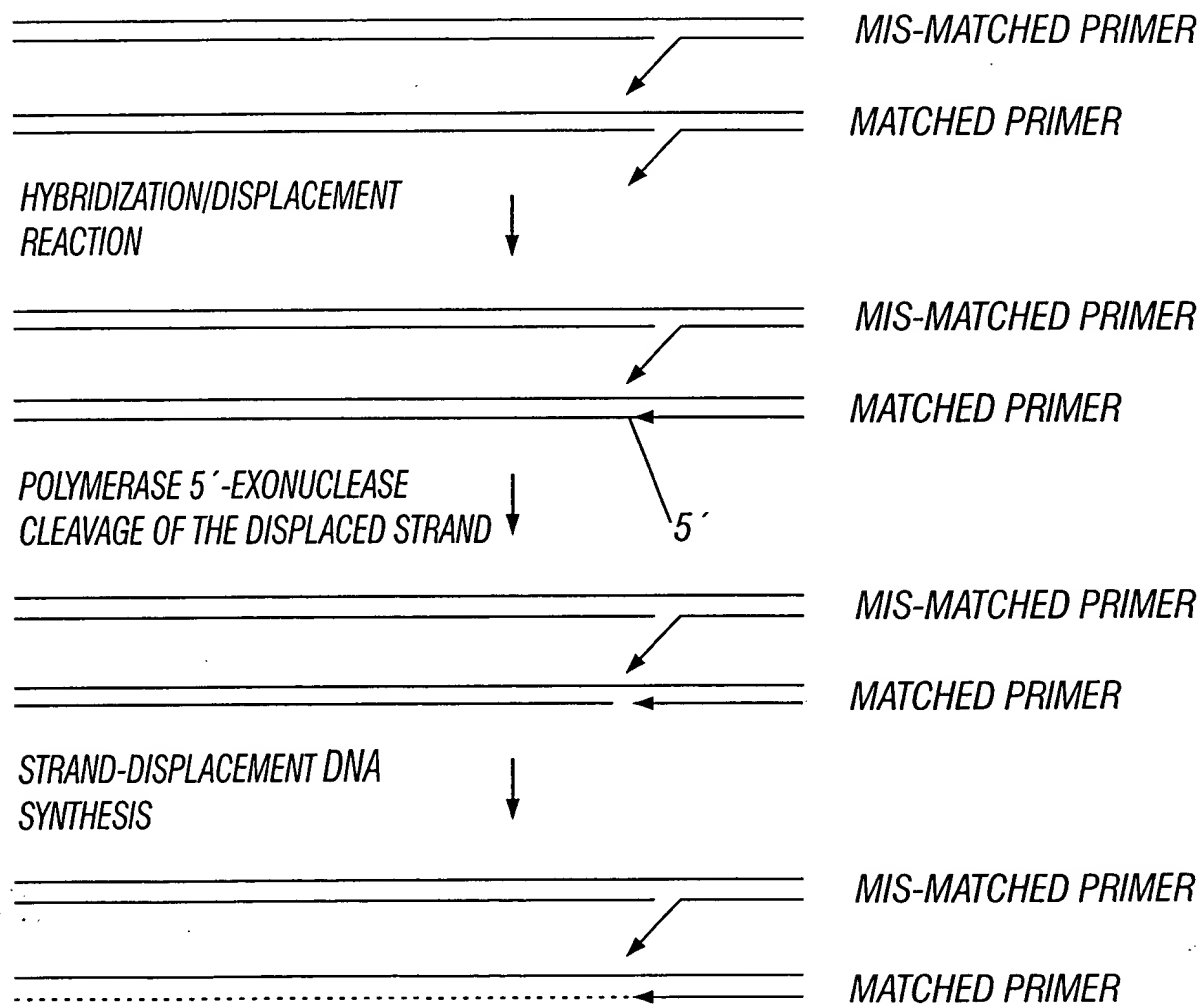


FIG. 33B